Data from the Commercial Fishery for Arctic Char, *Salvelinus alpinus* (Linnaeus), in the Cambridge Bay Area, Northwest Territories, 1971-78

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May 1980

Canadian Data Report of Fisheries & Aquatic Sciences No.184

2008-03548/

Canadian Data Report of Fisheries and Aquatic Sciences

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Fisheries and Aquatic Sciences

No. 184

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DATA FROM THE COMMERCIAL FISHERY FOR ARCTIC CHAR, *Salvelinus alpinus* (Linnaeus), IN THE CAMBRIDGE BAY AREA, NORTHWEST TERRITORIES, 1971-78

by

A.H. Kristofferson and G.W. Carder

THE ERIC MARSHALL AQUATIC
AUG 27 1999
WINNIPEG, MANITOBA

Western Region

Department of Fisheries and Oceans

Winnipeg, Manitoba R3T 2N6

This is the 28th Data Report

from the Western Region, Winnipeg

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Cat. No. Fs 97-13/184 ISSN 0706-6464

Correct citation for this publication is:

KRISTOFFERSON, A.H., and G.W. CARDER. 1980. Data from the commercial fishery for Arctic char, *Salvelinus alpinus* (Linnaeus), in the Cambridge Bay area, Northwest Territories, 1971-78. Can. Data Rep. Fish. Aquat. Sci. 184: v + 25p.

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ABSTRACT

KRISTOFFERSON, A.H., and G.W. CARDER. 1980. Data from the commercial fishery for Arctic char, *Salvelinus alpinus* (Linnaeus), in the Cambridge Bay area, Northwest Territories, 1971-78. Can. Data Rep. Fish. Aquat. Sci. 184: v + 25p.

A commercial fishery for anadromous Arctic char has operated in the Cambridge Bay area since 1960. Fisheries personnel have taken samples of char from this commercial fishery on an annual basis during 1971-78. Biological data from these samples are presented in this report.

Key words: catch statistics; commercial fishing; exploitation; life history; monitoring; fishery management.

RESUME

KRISTOFFERSON, A.H., and G.W. CARDER. 1980. Data from the commercial fishery for Arctic char, *Salvelinus alpinus* (Linnaeus), in the Cambridge Bay area, Northwest Territories, 1971-78. Can. Data Rep. Fish. Aquat. Sci. 184: v + 25p.

Depuis 1960, la pêche commerciale de l'omble chevalier anadrome se pratique dans la Cambridge Bay. De 1971 à 1978, des ombles ont été capturés par le Service des pêches. Le présent rapport contient des données biologiques sur ces échantillons.

Mots-clés: statistiques sur les prises; pêche commerciale; exploitation; cycle vital; contrôle; gestion des ressources halieutiques.

INTRODUCTION

Inuit of the Cambridge Bay area, Northwest Territories, have traditionally fished the Ekalluk River, Greiner River (Freshwater Creek) and Ferguson Lake for Arctic char, *Salvelinus alpinus* (Linnaeus), and lake trout *Salvelinus namaycush* (Walbaum), for domestic consumption (Barlishen and Webber 1973). In 1960 the federal Department of Northern Affairs and National Resources conducted a test fishery to determine the feasibility of commercial fishing in this area. The test fishery was primarily directed toward the harvest of anadromous (searun) Arctic char. Local fishermen were hired and fish caught were sold in Cambridge Bay. Due to the success of this test fishery the federal Department of Fisheries granted a quota to be harvested for commercial purposes in this area. As a result the Ekaloktotiak Eskimo Co-operative was formed at Cambridge Bay to undertake this fishing operation (Barlishen and Webber 1973).

Commercial fishing began in the early 1960's on the Greiner River, Ekalluk River and Ferguson Lake. When stocks in the Greiner River (Freshwater Creek) declined the fishery moved to Wellington Bay (Ekalluk River) in 1962. In the late 1960's and early 1970's fishing began on the Halovik (Thirty Mile), Paliryuak (Surrey), Lauchlan (Byron Bay) and Ellice Rivers followed by Jayco (1975) and Perry (1977). Other areas such as Dease Point, Starvation Cove and Elu Inlet have been fished occasionally. For a detailed history of the early development of this fishery see Barlishen and Webber (1973).

Since 1971 the Fisheries and Marine Service, Department of the Environment (now Department of Fisheries and Oceans) has monitored the catch taken by this commercial fishery. Information collected from samples taken annually has been used to monitor the strength of the various exploited stocks, and changes in quotas have been based on these data. The data from 1971-78 are presented in this report.

MATERIALS AND METHODS

THE FISHERY

Prior to spring breakup, boats and equipment are transported to the fishing sites while overland travel is possible. Summer fishing begins as soon as the rivers begin to flow. At this time the char begin their downstream passage to the sea to feed (Scott and Crossman 1973; McPhail and Lindsey 1970). Fishermen are flown in by float equipped aircraft and set up camp with 2-8 men per river. Usually, Paliryuak, Halovik and Lauchlan rivers and Elu Inlet (Fig. 1) are fished during the downstream run, which begins around mid July and lasts until the end of the month or into early August. The upstream run begins around mid August and lasts until the first week in September. The Ellice, Perry, Ekalluk and Jayco rivers (Fig. 1) are fished at this time. Starvation Cove has been fished in mid summer in open water along the coast.

Fishermen, usually two per boat, set nets in the estuaries or river mouths. Most are bottom sets and are lifted twice a day. Nets average 45-90 meters in length, 140 to 165 mm mesh size, and 20 to 30 meshes deep. The fish are dressed on site (gills and viscera removed) and flown daily to the freezer plant in Cambridge Bay by float equipped aircraft. At the plant the fish are washed, fast frozen, sorted by size and packed for shipment to the Freshwater Fish Marketing Corporation in Edmonton, by scheduled air carrier. From there the char are distributed throughout Canada and the United States. Some char are kept in Cambridge Bay for local sale.

The number of fishermen and length of time spent at each site depends upon the quota allocation and duration of the run. In 1978 thirteen fishermen were based at the Ellice River, ten at Perry River, eight at Lauchlan River, six at Halovik River, eight at Jayco River, ten at Ekalluk River, three at Paliryuak River and two at Elu Inlet (R. Connelly pers. comm.). Fishermen were paid $1.10 per kg (50¢ per pound) for dressed fish. They earned an average of $1100 per man at each site, with a high of $2400 at one site and a low of $115 at another. The plant employed from 6 to 18 people during the summer with over $8600 in total wages being paid out to plant employees (R. Connelly pers. comm.).

Incidental species sometimes marketed locally include lake trout, lake whitefish, *Coregonus clupeaformis* (Mitchill), and broad whitefish, *Coregonus nasus* (Pallas).

Very little winter fishing takes place at present. For a description of winter fishing during the early history of this fishery see Barlishen and Webber (1973).

SAMPLING THE CATCH

Fisheries and Marine Service collected samples from the commercial catch during 1971-78. Samples were taken annually either at the fishing site or at the plant in Cambridge Bay. Samples were not taken each year from every site. Char sampled from the Ekalluk River in 1972 were taken in experimental nets of 140 mm mesh size set by Fisheries personnel since the commercial fishery was closed at this site during this year.

At the plant, boxes of fish were selected at random, and all fish in each box selected were sampled. Care was taken to ensure that the site of capture, marked on incoming boxes was recorded during sampling. Fork length (±1.0 mm) and dressed weight (±50 g) were recorded. Since fish arrived at the plant with the gills and viscera removed, round weight and sex could not be determined. Saggital otoliths were removed for later age determination. Otoliths were stored dry in envelopes upon which the sample information was recorded. In the laboratory otoliths were ground on a fine carborundum stone to expose annual growth rings. While immersed in a 3:1 solution of benzyl-benzoate and methyl salicylate, otoliths were examined under a dissecting microscope and age was determined by counting growth rings.

At the fishing site, boxes of fish were chosen at random as the fishermen brought the catch to shore. All fish in each box selected were sampled. Attempts were made to sample at least 100 fish at each site. Fork length (±1.0 mm), round weight (±50 g), dressed weight (±50 g)

and sex were recorded. Saggital otoliths were removed for later age determination.

Since the majority of sampling took place at the processing plant, where sex and maturity could not be determined, the few data collected on sex and maturity are not presented in this report but will appear in a future report, when more of these data have been collected.

DATA ANALYSIS

Annual mortality rates (natural and fishing) were calculated using the method of Robson and Chapman (1961).

Data were analyzed using a programmable calculator (Hewlett Packard model 9810-A) and computer facilities located at the University of Manitoba.

ACKNOWLEDGMENTS

The authors wish to thank the Cambridge Bay commercial fishermen and Mr. M. Merkley and Staff of the Ekaloktotiak Eskimo Co-operative for their assistance and co-operation during the collection of these data. Thanks also to Mr. R.O. Connelly and staff of the Department of Economic Development and Tourism, Government of the Northwest Territories, Cambridge Bay, Northwest Territories.

Summer field assistance was provided by T. Webber (1972-73), R. Mohr (1974), D. Davidge (1976), R. Mulders (1977-78), R. Hagen (1978) and C. Nakashook (1978). Biological assistance was provided by R. Peet (1972-75), L. Dahlke (1975), R. Moshenko (1976-78) and D. McGowan (1978). Drafting was provided by Graphic Services, Freshwater Institute. Typing was done by K. McKay and M. Kroeker.

As well, the authors wish to thank the staff of Fisheries and Marine Service, Yellowknife and Hay River for their help. R.W. Moshenko and M.R. Falk reviewed an earlier draft of the report.

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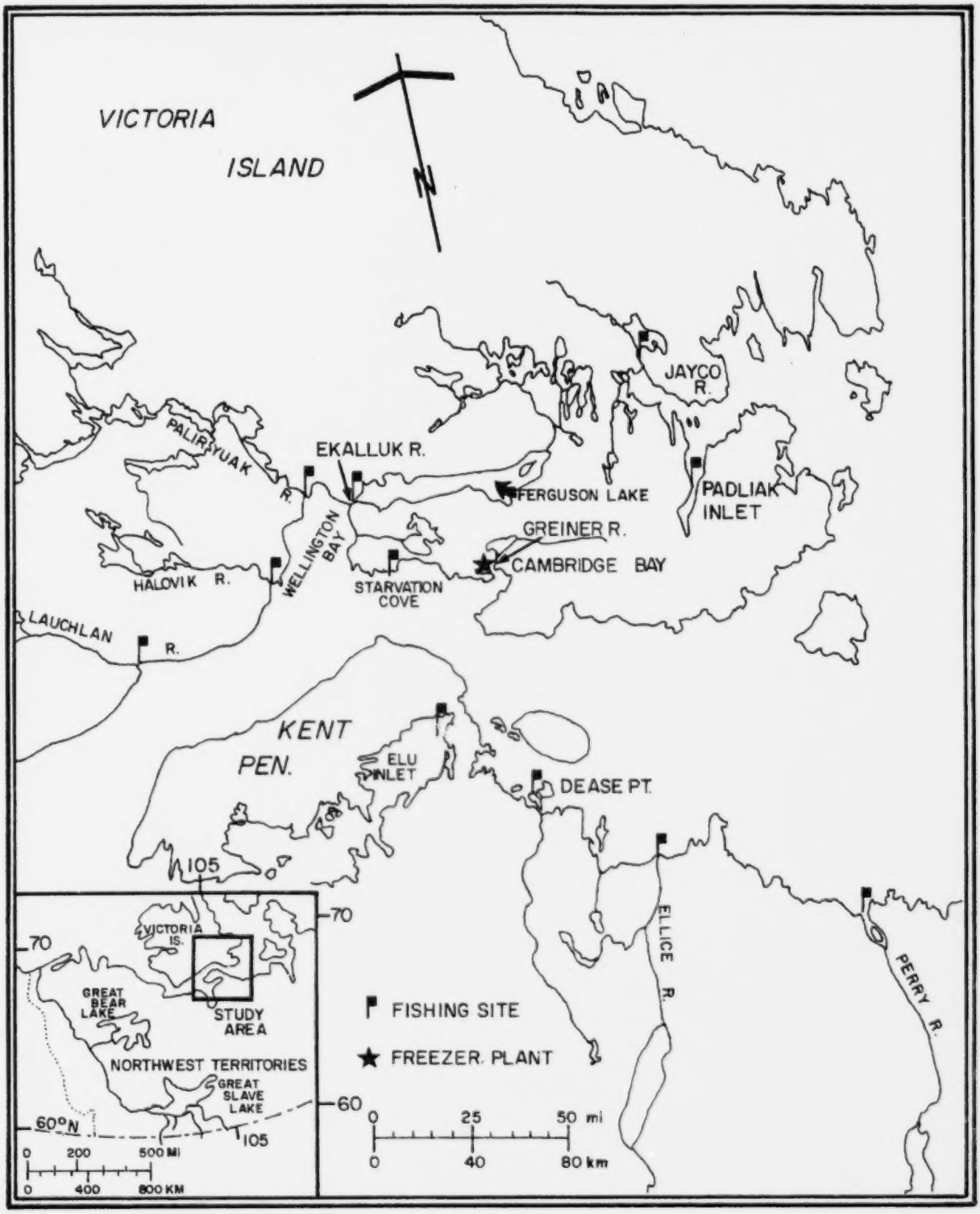

Fig. 1. Map of the Cambridge Bay area showing locations of commercial fishing sites.

Table 1. Production of anadromous Arctic char by system, throughout the history of the Cambridge Bay commercial fishery (1960-78), quotas in brackets.

System	Annual Production (pounds round weight)																		
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978[a]
Ekalluk R.	35000 (experimental)		12709 (40000)	30588 (40000)	34181 (40000)	46000 (40000)	37000 (40000)	61000 (100000)[b]	75609 (100000)[b]	50000 (100000)[b]	-------- CLOSED -------			21205 (40000)	27646 (25000)	27030 (25000)	30045 (25000)	35047 (25000)	32153 (25000)
Halovik R. (30 mile R.)									5763 (100000)[b]	57000 (100000)[b]	57768 (100000)[b]	23000 (100000)[b]	14280 (20000)	4229 (20000)	--- CLOSED ---		6129 (20000)	10195 (10000)	12641 (10000)
Paliryuak R. (Surrey R.)									14250 (100000)[b]		12959 (100000)[b]							7173 (10000)[c]	18554 (15000)[c]
Lauchlan R. (Byron Bay)				5000 (NIL)[d]							5336 (100000)[b]	42000 (100000)[b]	46283 (40000)	21289 (40000)	17913 (25000)	-- CLOSED --		3348 (15000)	18818 (15000)
Ellice R.												28250 (50000)	27610 (25000)	15960 (25000)	15336 (25000)	22834 (25000)	27952 (30000)	45847 (30000)	20102 (30000)
Perry R.																		30091 (25000)	17935 (25000)
Jayco R.																18146 (15000)	20805 (15000)	16674 (15000)	29573 (25000)
Elu Inlet																		5782 (5000)[c]	578 (5000)[c]
Dease Point (2 rivers)													19594 (20000)		6660 (50000)		2572 (45000)		
Cambridge Bay (Greiner River)	4500 (exper-imental)	16635 (23000)																	
Ferguson Lake			4246 (40000)[e]	569 (40000)[e]	1341 (40000)[e]	1000 (40000)[e]									2870 (25000)[e]	958 (25000)[e]			
Starvation Cove																		14038 (NIL)[d]	
Padliak Inlet																		1949 (5000)[c]	

[a] Pound weight calculated using a dressed weight - round weight conversion factor of 1.25.
[b] Area quota allocated to Wellington Bay (See Fig. 1).
[c] Test fishery permit.
[d] No quota assigned.
[e] Combined quota primarily for lake trout with Arctic char as incidental catch.

Table 2. Age composition of Arctic char taken by experimental nets set at Ekalluk River, 1972.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Round Weight (g) Mean	SD
11	4	2.9	58.1	4.4	2024	595.5
12	16	11.7	62.7	2.4	2426	309.9
13	38	27.7	64.0	3.2	2531	453.8
14	46	33.6	64.9	2.9	2672	400.1
15	23	16.8	67.7	4.4	3096	693.1
16	8	5.8	67.9	3.0	3178	594.6
17	1	0.7	72.0	-	3262	-
18	1	0.7	72.0	-	3375	-
Total	137	Mean	65.0	3.9	2695	547.2
Mean Age 13.7						

Table 3. Length composition of Arctic char taken by experimental nets set at Ekalluk River, 1972.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Round Weight (g) Mean	SD
50.0-54.9	3	2.0	54.0	-	1462	196.3
55.0-59.9	7	4.6	58.2	-	1863	215.0
60.0-64.9	71	47.0	62.6	-	2384	196.3
65.0-69.9	52	34.4	67.0	-	2906	274.8
70.0-74.9	16	10.6	71.5	-	3628	277.0
75.0-79.9	2	1.3	76.3	-	4274	157.7
Total	151	Mean	64.9	4.0	2678	550.8

Table 4. Age composition of Arctic char taken by the commercial fishery at Ekalluk River, 1974.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
10	2	2.6	59.8	8.1	2550	1343.5
11	8	10.3	63.6	5.3	2825	742.1
12	13	16.7	70.5	4.1	3740	747.7
13	21	26.9	69.3	6.2	3533	901.3
14	27	34.6	68.5	5.6	3417	899.5
15	4	5.1	69.3	5.1	3613	661.3
16	1	1.3	69.5	-	3300	-
18	1	1.3	67.5	-	3050	-
19	1	1.3	72.5	-	4275	-
Total	78	Mean	68.4	5.8	3434	867.4
Mean Age 13.2						

Table 5. Length composition of Arctic char taken by the commercial fishery at Ekalluk River, 1974.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
50.0-54.9	8	4.9	52.6	-	1438	223.2
55.0-59.9	11	6.7	57.3	-	1861	308.3
60.0-64.9	26	16.0	62.8	-	2588	280.7
65.0-69.9	56	34.4	67.3	-	3246	251.3
70.0-74.9	50	30.7	71.9	-	3941	381.6
75.0-79.9	10	6.1	76.6	-	4760	389.1
80.0-84.9	2	1.2	82.0	-	4575	318.2
Total	163	Mean	67.4	6.1	3281	875.7

Table 6. Age composition of Arctic char taken by the commercial fishery at Ekalluk River, 1976.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
10	1	0.8	50.5	-	1200	-
11	7	5.6	56.7	3.3	1807	418.8
12	12	9.6	61.2	3.1	2333	429.8
13	17	13.6	63.5	4.3	2591	534.2
14	14	11.2	63.0	6.7	2639	773.9
15	23	18.4	66.1	4.6	2980	669.6
16	18	14.4	68.7	4.0	3330	644.7
17	26	20.8	71.0	4.5	3721	775.4
18	1	0.8	66.4	-	2900	-
19	4	3.2	71.3	4.8	3513	679.9
20	1	0.8	69.4	-	3200	-
21	1	0.8	65.9	-	2600	-
Total	125	Mean	65.9	6.1	2967	845.3

Mean Age 14.9

Table 7. Length composition of Arctic char taken by the commercial fishery at Ekalluk River, 1976.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
50.0-54.9	6	4.3	52.4	-	1375	169.6
55.0-59.9	18	12.8	58.1	-	1994	273.3
60.0-64.9	37	26.2	62.8	-	2527	238.2
65.0-69.9	40	28.4	67.8	-	3161	332.5
70.0-74.9	34	24.1	72.1	-	3797	389.2
75.0-79.9	6	4.3	77.2	-	4275	520.3
Total	141	Mean	66.0	6.0	2988	827.6

Table 8. Age composition of Arctic char taken by the commercial fishery at Ekalluk River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
10	1	0.9	71.9	-	4250	-
11	4	3.6	60.3	2.1	2313	213.6
12	13	11.8	63.0	3.3	2696	473.7
13	22	20.0	63.8	2.9	2723	373.8
14	20	18.2	64.4	4.1	2838	594.2
15	12	10.9	68.5	5.2	3267	769.7
16	26	23.6	67.3	3.9	2956	568.0
17	6	5.5	70.8	5.9	3533	1031.8
18	4	3.6	71.4	2.1	3100	454.6
19	1	0.9	75.5	-	3900	-
20	-	-	-	-	-	-
21	1	0.9	64.4	-	2700	-
Total	110	Mean	65.9	4.7	2923	626.3
Mean Age 14.4						

Table 9. Length composition of Arctic char taken by the commercial fishery at Ekalluk River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
45.0-49.9	2	0.9	48.6	-	1025	35.4
50.0-54.9	4	1.7	53.9	-	1713	110.9
55.0-59.9	29	12.4	58.1	-	2122	219.8
60.0-64.9	79	33.8	62.4	-	2503	228.8
65.0-69.9	75	32.1	67.3	-	3057	359.1
70.0-74.9	35	15.0	71.8	-	3643	432.0
75.0-79.9	9	3.8	77.2	-	4556	718.7
80.0-84.9	1	0.4	80.0	-	5050	-
Total	234	Mean	65.2	5.5	2868	712.7

Table 10. Age composition of Arctic char taken by the commercial fishery at Ekalluk River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
10	1	0.6	42.7	-	550	-
11	8	4.6	60.4	6.7	2058	776.4
12	13	7.5	63.0	5.3	2315	627.0
13	26	15.0	66.3	4.7	2716	616.1
14	29	16.8	66.8	3.3	2784	468.7
15	40	23.1	67.6	3.7	2834	484.6
16	16	9.2	70.6	4.7	3200	623.7
17	22	12.7	71.2	4.1	3295	622.6
18	8	4.6	75.8	4.4	3613	502.7
19	7	4.0	70.7	6.5	2907	754.7
20	3	1.7	69.7	4.4	2883	354.7
Total	173	Mean	67.7	5.7	2852	676.8
Mean Age 14.8						

Table 11. Length composition of Arctic char taken by the commercial fishery at Ekalluk River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
40.0-44.9	1	0.4	42.7	-	550	-
45.0-49.9	1	0.4	49.4	-	910	-
50.0-54.9	3	1.3	53.5	-	1267	76.4
55.0-59.9	7	3.1	57.2	-	1621	103.5
60.0-64.9	40	17.6	63.1	-	2353	349.3
65.0-69.9	92	40.5	67.4	-	2784	216.0
70.0-74.9	56	24.7	71.9	-	3355	341.2
75.0-79.0	20	8.8	76.7	-	3873	384.0
80.0-84.9	6	2.6	82.0	-	4433	933.6
85.0-89.9	1	0.4	85.4	-	6000	-
Total	227	Mean	68.4	5.8	2928	725.2

Table 12. Annual mortality rates for Arctic char taken in the commercial fishery at Ekalluk River.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1972	15-18	0.2889	0.0665	0.0044	0.7111
1978	16-20	0.5635	0.0438	0.0019	0.4365

Table 13. Age composition of Arctic char taken by the commercial fishery at Halovik River, 1972.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Round Weight (g) Mean	Round Weight (g) SD	Weights Unknown
7	3	3.8	35.7	11.5	562	-	1
8	10	12.7	44.1	9.0	790	806.4	1
9	12	15.2	43.3	6.2	601	187.1	2
10	8	10.1	49.0	3.8	937	231.1	
11	6	7.6	54.3	11.6	1485	904.5	
12	8	10.1	63.9	13.3	2285	1041.2	2
13	8	10.1	66.3	7.8	2573	1215.4	2
14	3	3.8	71.7	3.1	3515	-	2
15	10	12.7	74.4	8.2	3190	898.2	3
16	3	3.8	82.5	3.9	5484	878.3	
17	3	3.8	76.8	6.8	4199	1499.8	
18	4	5.1	82.0	5.8	5449	1325.4	
19	1	1.3	84.5	-	5203	-	
Total	79	Mean	59.2	16.5	2147	1790.9	
Mean Age	11.9						

Table 14. Length composition of Arctic char taken by the commercial fishery at Halovik River, 1972.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Round Weight (g) Mean	Round Weight (g) SD	Weights Unknown
20.0-24.9	1	0.4	22.5	-	-	-	1
25.0-29.9	-	-	-	-	-	-	
30.0-34.9	1	0.4	31.0	-	250	-	
35.0-39.9	10	4.1	37.7	-	422	58.8	
40.0-44.9	18	7.4	42.6	-	604	106.3	2
45.0-49.9	11	4.5	46.7	-	867	194.9	
50.0-54.9	16	6.6	52.3	-	1227	160.8	
55.0-59.9	24	9.8	57.3	-	1545	156.6	2
60.0-64.9	38	15.6	62.6	-	2171	301.7	
65.0-69.9	43	17.6	67.1	-	2734	278.4	
70.0-74.9	25	10.2	71.6	-	3405	426.5	2
75.0-79.9	22	9.0	76.5	-	4140	589.3	6
80.0-84.9	26	10.7	81.8	-	4921	647.3	7
85.0-89.9	7	2.9	86.9	-	6714	730.4	3
90.0-94.9	2	0.8	91.8	-	6957	504.2	
Total	244	Mean	63.8	13.4	2517	1504.9	

Table 15. Length composition of Arctic char taken by the commercial fishery at Halovik River, 1973.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Round Weight (g) Mean	Round Weight (g) SD
40.0-44.9	4	6.3	43.2	-	669	53.6
45.0-49.0	6	9.4	47.2	-	879	184.8
50.0-54.9	12	18.8	53.0	-	1169	137.8
55.0-59.0	11	17.2	57.4	-	1503	135.1
60.0-64.9	13	20.3	62.5	-	1990	186.2
65.0-69.0	5	7.8	66.0	-	2604	337.4
70.0-74.9	3	4.7	72.0	-	3192	162.7
75.0-79.9	7	10.9	76.8	-	3461	461.7
80.0-84.9	2	3.1	81.8	-	4163	512.7
85.0-89.9	1	1.6	85.5	-	5550	-
Total	64	Mean	60.4	10.7	1954	1065.4

Table 16. Age composition of Arctic char taken by the commercial fishery at Halovik River, 1976.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
9	1	3.0	51.9	-	1300	-
10	1	3.0	54.6	-	1550	-
11	3	9.1	59.1	1.2	2017	230.9
12	10	30.3	63.5	4.3	2590	639.4
13	4	12.1	62.9	5.8	2675	773.0
14	4	12.1	66.6	6.6	2988	322.4
15	5	15.2	67.9	5.1	3030	767.8
16	4	12.1	69.3	7.9	3363	1212.7
17	1	3.0	77.0	-	3950	-
Total	33	Mean	64.5	6.6	2727	822.3
Mean Age	13.2					

Table 17. Length composition of Arctic char taken by the commercial fishery at Halovik River, 1976.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
50.0-54.9	9	11.3	53.1	-	1528	139.4
55.0-59.9	12	15.0	57.9	-	1825	199.4
60.0-64.9	22	27.5	62.4	-	2566	367.2
65.0-69.9	20	25.0	67.1	-	2960	390.2
70.0-74.9	12	15.0	72.2	-	3654	325.8
75.0-79.9	5	6.3	76.7	-	3930	623.1
Total	80	Mean	64.2	6.7	2685	802.0

Table 18. Age composition of Arctic char taken by the commercial fishery at Halovik River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
8	1	1.0	54.3	-	1300	-
9	1	1.0	49.9	-	1100	-
10	6	6.0	48.0	4.7	967	235.9
11	9	9.0	54.1	8.2	1533	801.6
12	11	11.0	56.3	5.6	1627	468.2
13	10	10.0	61.0	7.4	2040	811.3
14	9	9.0	68.3	5.7	2861	899.2
15	20	20.0	68.3	5.4	2770	733.5
16	18	18.0	70.7	5.7	3094	818.0
17	10	10.0	73.8	3.4	3490	334.8
18	2	2.0	68.3	13.4	3150	1626.3
19	3	3.0	64.5	9.6	2350	996.2
Total	100	Mean	64.3	9.6	2454	1020.7
Mean Age	14.2					

Table 19. Length composition of Arctic char taken by the commercial fishery at Halovik River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
40.0-44.9	2	1.3	40.3	-	575	35.4
45.0-49.9	7	4.6	48.3	-	971	103.5
50.0-54.9	11	7.3	52.3	-	1227	127.2
55.0-59.9	15	9.9	57.3	-	1623	191.7
60.0-64.9	30	19.9	62.1	-	2030	288.5
65.0-69.9	28	18.5	67.5	-	2793	345.5
70.0-74.9	35	23.2	72.4	-	3300	368.8
75.0-79.9	23	15.2	76.4	-	3791	330.2
Total	151	Mean	65.5	8.7	2567	950.9

Table 20. Age composition of Arctic char taken by the commercial fishery at Halovik River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
11	2	1.6	57.9	8.9	1925	813.2
12	9	7.4	64.0	5.1	2350	715.5
13	11	9.0	67.7	7.3	2768	775.7
14	31	25.4	68.2	5.2	3013	692.0
15	25	20.5	67.6	4.5	2724	602.6
16	25	20.5	70.2	4.6	3102	600.8
17	12	9.8	69.6	3.5	2938	731.2
18	6	4.9	68.1	4.7	2850	779.1
19	-	-	-	-	-	-
20	1	0.8	74.8	-	3200	-
Total	122	Mean	68.2	5.3	2869	695.0
Mean Age	14.9					

Table 21. Length composition of Arctic char taken by the commercial fishery at Halovik River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
40.0-44.9	1	0.6	43.0	-	600	-
45.0-49.9	1	0.6	47.9	-	850	-
50.0-54.9	3	1.7	52.3	-	1267	76.4
55.0-59.9	7	4.0	57.3	-	1529	195.5
60.0-64.9	21	12.1	62.8	-	2376	392.0
65.0-69.9	70	40.2	67.3	-	2749	375.8
70.0-74.9	48	27.6	71.9	-	3279	371.9
75.0-79.9	23	13.2	76.8	-	3913	456.8
Total	174	Mean	68.4	5.9	2906	731.8

Table 22. Annual mortality rates for Arctic char taken in the commercial fishery at Halovik River.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1972	10-19	0.7801	0.0264	0.0007	0.2199
1976	13-17	0.6383	0.0681	0.0046	0.3617
1977	16-19	0.4182	0.0655	0.0043	0.5818
1978	15-20	0.5303	0.0446	0.0020	0.4697

Table 23. Age composition of Arctic char taken by the commercial fishery at Paliryuak River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
9	1	1.2	40.2	-	600	-
10	8	9.8	57.1	3.7	1631	369.3
11	10	12.2	60.0	5.1	1940	626.2
12	8	9.8	61.9	6.7	2094	705.8
13	10	12.2	65.2	6.9	2525	733.0
14	11	13.4	70.0	5.8	2841	678.9
15	11	13.4	68.6	5.4	2827	815.3
16	15	18.3	70.2	5.6	3117	581.2
17	2	2.4	66.1	4.8	2575	530.3
18	5	6.1	71.1	5.2	2890	837.0
19	1	1.2	75.8	-	3650	-
Total	82	Mean	65.7	7.7	2529	832.7
Mean Age	13.7					

Table 24. Length composition of Arctic char taken by the commercial fishery at Paliryuak River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
40.0-44.9	1	0.8	40.2	-	600	-
45.0-49.9	1	0.8	48.2	-	1000	-
50.0-54.9	5	3.8	52.6	-	1200	117.3
55.0-59.9	17	13.1	57.3	-	1577	152.2
60.0-64.9	20	15.4	62.4	-	2118	270.1
65.0-69.9	25	19.2	68.0	-	2818	303.8
70.0-74.9	41	31.5	72.0	-	3320	331.8
75.0-79.9	19	14.6	76.8	-	3745	272.3
80.0-84.9	1	0.8	80.2	-	3700	-
Total	130	Mean	67.4	7.6	2755	853.6

Table 25. Age composition of Arctic char taken by the commercial fishery at Lauchlan River, 1972.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
9	2	1.6	34.8	10.3	337	318.2
10	3	2.4	47.7	16.8	1083	1216.1
11	1	0.8	58.0	-	1350	-
12	4	3.2	59.6	10.6	1912	904.8
13	5	4.0	64.5	6.3	2317	633.7
14	19	15.1	68.2	6.1	2905	996.0
15	14	11.1	71.5	7.7	3388	1351.5
16	23	18.3	77.4	7.4	3957	1094.0
17	22	17.5	81.2	5.5	4343	1003.9
18	18	14.3	80.1	4.4	4162	780.7
19	8	6.3	84.8	4.6	5034	926.9
20	4	3.2	81.9	3.0	4656	373.2
21	2	1.6	82.5	-	4725	318.2
22	1	0.8	84.5	-	4725	-
Total	126	Mean	74.5	11.2	3664	1364.8
Mean Age	16.0					

Table 26. Length composition of Arctic char taken by the commercial fishery at Lauchlan River, 1972.

Length Interval (cm	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
25.0-29.9	1	0.4	27.5	-	112	-
30.0-34.9	1	0.4	33.0	-	225	-
35.0-39.9	-	-	-	-	-	-
40.0-44.9	4	1.4	43.0	-	531	54.3
45.0-49.9	5	1.8	46.9	-	797	100.2
50.0-54.9	-	-	-	-	-	-
55.0-59.9	11	3.9	57.4	-	1497	130.9
60.0-64.9	24	8.5	62.7	-	2194	214.7
65.0-69.9	38	13.5	67.4	-	2645	285.1
70.0-74.9	31	11.0	71.8	-	3327	456.4
75.0-79.9	51	18.1	77.1	-	3993	649.1
80.0-84.9	72	25.5	82.2	-	4632	587.3
85.0-89.9	37	13.1	86.9	-	5163	790.4
90.0-94.9	6	2.1	91.2	-	6475	975.2
95.0-99.9	1	0.4	95.5	-	6525	-
Total	282	Mean	74.8	10.9	3733	1392.8

Table 27. Age composition of Arctic char taken by the commercial fishery at Lauchlan River, 1973.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Round Weight (g) Mean	Round Weight (g) SD	Weights Unknown
5	2	2.9	36.9	5.9	650	282.8	
6	2	2.9	40.5	5.7	930	381.8	
7	2	2.9	40.3	3.2	800	141.4	
8	7	10.3	43.3	5.2	1070	381.5	
9	17	25.0	47.9	3.3	1441	270.2	
10	8	11.8	50.1	2.3	1538	206.7	
11	3	4.4	55.2	5.3	2042	477.2	
12	9	13.2	55.8	5.7	2019	708.5	2
13	7	10.3	57.3	9.6	1959	794.9	2
14	5	7.4	57.0	9.6	1994	793.8	1
15	4	5.9	56.1	7.4	2208	1119.8	1
16	-	-	-	-	-	-	
17	1	1.5	55.0	-	2000	-	
18	-	-	-	-	-	-	
19	-	-	-	-	-	-	
20	1	1.5	75.2	-	-	-	1
Total	68	Mean	50.9	8.4	1569	628.2	
Mean Age	10.6						

Table 28. Length composition of Arctic char taken by the commercial fishery at Lauchlan River, 1973.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Round Weight (g) Mean	SD	Weights Unknown
30.0-34.9	1	0.7	32.7	-	450	-	
35.0-39.9	7	5.0	38.0	-	709	67.5	
40.0-44.9	9	6.4	43.1	-	1032	118.0	
45.0-49.9	30	21.3	47.5	-	1373	115.1	1
50.0-54.9	17	12.1	52.6	-	1784	197.1	
55.0-59.9	17	12.1	57.4	-	1996	455.6	1
60.0-64.9	7	5.0	62.6	-	3431	159.9	3
65.0-69.9	8	5.7	67.4	-	3406	627.9	1
70.0-74.9	14	9.9	72.7	-	3880	827.5	1
75.0-79.9	16	11.3	76.9	-	3697	794.1	1
80.0-84.9	13	9.2	82.4	-	4520	872.1	
85.0-89.9	2	1.4	86.0	-	5213	159.1	
Total	141	Mean	59.9	14.1	2477	1380.9	

Table 29. Age composition of Arctic char taken by the commercial fishery at Lauchlan River, 1974.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Round Weight (g) Mean	SD
6	3	2.5	41.0	4.8	740	283.5
7	3	2.5	37.6	13.6	828	675.2
8	8	6.8	51.6	5.9	1689	592.6
9	12	10.2	57.1	8.0	2340	928.4
10	19	16.1	57.3	6.9	2468	996.1
11	13	11.0	60.6	8.4	2930	1160.9
12	12	10.2	68.2	5.6	4322	1098.8
13	16	13.6	68.4	4.9	4162	746.9
14	15	12.7	69.8	8.8	4596	1559.1
15	3	2.5	70.3	0.8	4438	437.5
16	7	5.9	76.7	4.7	5066	847.6
17	2	1.7	73.3	3.2	4594	132.9
18	4	3.4	80.3	1.0	5836	518.7
19	1	0.8	83.0	-	6375	-
Total	118	Mean	63.3	11.4	3444	1613.1
Mean Age	11.8					

Table 30. Length composition of Arctic char taken by the commercial fishery at Lauchlan River, 1974.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Round Weight (g) Mean	SD
20.0-24.9	1	0.7	22.3	-	110	-
25.0-29.9	-	-	-	-	-	-
30.0-34.9	-	-	-	-	-	-
35.0-39.9	2	1.5	38.3	-	580	84.9
40.0-44.9	2	1.5	42.5	-	883	60.1
45.0-49.9	9	6.7	47.4	-	1306	186.0
50.0-54.9	19	14.1	51.9	-	1737	195.7
55.0-59.9	14	10.4	57.0	-	2227	242.3
60.0-64.9	14	10.4	61.9	-	2986	400.0
65.0-69.9	28	20.7	67.3	-	3964	397.6
70.0-74.9	24	17.8	72.1	-	4804	558.0
75.0-79.9	14	10.4	76.8	-	5492	771.2
80.0-84.9	8	5.9	81.8	-	5663	629.3
Total	135	Mean	63.7	11.3	3476	1584.7

Table 31. Age composition of Arctic char taken by the commercial fishery at Lauchlan River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
9	1	1.4	50.5	-	1100	-
10	1	1.4	66.5	-	2700	-
11	5	6.8	64.4	6.6	2340	723.2
12	11	14.9	62.6	6.3	2205	829.9
13	11	14.9	66.8	5.8	2827	800.1
14	13	17.6	71.5	5.3	2835	517.0
15	15	20.3	68.4	4.7	2773	648.9
16	9	12.2	68.3	4.0	2694	681.2
17	5	6.8	74.8	3.8	3330	476.4
18	3	4.1	72.7	6.7	2867	375.3
Total	74	Mean	67.9	6.4	2686	720.0
Mean Age	14.0					

Table 32. Length composition of Arctic char taken by the commercial fishery at Lauchlan River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
45.0-49.9	1	1.0	48.7	-	950	-
50.0-54.9	3	3.1	52.1	-	1200	86.6
55.0-59.9	9	9.2	57.2	-	1517	226.4
60.0-64.9	9	9.2	61.4	-	1989	194.9
65.0-69.9	33	33.7	67.9	-	2741	327.3
70.0-74.9	30	30.6	72.3	-	3173	403.8
75.0-79.9	11	11.2	77.1	-	3495	405.9
80.0-84.9	2	2.0	81.5	-	3875	176.8
Total	98	Mean	68.3	6.9	2734	745.5

Table 33. Age composition of Arctic char taken by the commercial fishery at Lauchlan River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
10	2	1.5	47.2	0.4	875	35.4
11	8	5.9	60.9	7.0	2231	775.0
12	11	8.1	64.1	6.9	2536	821.6
13	21	15.4	65.5	5.7	2657	673.3
14	30	22.1	66.9	3.5	2777	423.6
15	26	19.1	68.2	3.4	3021	450.4
16	19	14.0	70.2	4.3	3174	672.6
17	12	8.8	72.6	5.5	3429	606.6
18	3	2.2	71.1	7.1	3133	675.2
19	2	1.5	69.1	2.6	2400	70.7
20	-	-	-	-	-	-
21	2	1.5	64.5	1.1	2425	247.5
Total	136	Mean	67.1	6.0	2836	689.1
Mean Age	14.4					

Table 34. Length composition of Arctic char taken by the commercial fishery at Lauchlan River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
45.0-49.9	5	2.9	46.9	-	870	90.8
50.0-54.9	2	1.2	52.2	-	1200	141.4
55.0-59.9	10	5.9	58.5	-	1800	170.0
60.0-64.9	23	13.5	62.9	-	2304	235.4
65.0-69.9	70	41.2	67.4	-	2878	268.3
70.0-74.9	46	27.1	71.7	-	3357	358.2
75.0-79.9	11	6.5	77.6	-	3777	541.5
80.0-84.9	3	1.8	81.7	-	4350	312.2
Total	170	Mean	67.6	6.3	2872	714.6

Table 35. Annual mortality rates for Arctic char taken in the commercial fishery at Lauchlan River.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1972	17-22	0.5221	0.0466	0.0022	.4779
1973	10-20	0.7419	0.0410	0.0017	.2581
1974	11-19	0.7188	0.0279	0.0008	.2812
1977	16-18	0.4074	0.0917	0.0084	.5926
1978	15-21	0.5313	0.0445	0.0020	.4687

Table 36. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1971.

Age Group (cm)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Round Weight (g) Mean	Round Weight (g) SD
9	1	1.1	39.0	-	1022	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	2	2.1	64.0	17.0	2955	1607.3
13	42	44.2	64.5	3.2	3076	488.6
14	27	28.4	67.1	2.4	3400	572.4
15	16	16.8	69.8	4.7	3961	873.4
16	3	3.2	77.0	5.3	5521	854.7
17	3	3.2	74.3	12.7	4772	2306.9
18	1	1.1	70.0	-	3863	-
Total	95	Mean	66.6	5.9	3432	918.0
Mean Age	13.8					

Table 37. Length composition of Arctic char taken by the commercial fishery at Ellice River, 1971.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Round Weight (g) Mean	SD
35.0-39.9	1	1.0	39.0	-	1022	-
40.0-44.9	-	-	-	-	-	-
45.0-49.9	-	-	-	-	-	-
50.0-54.9	1	1.0	52.0	-	1818	-
55.0-59.9	3	3.0	58.0	-	2462	173.7
60.0-64.9	25	25.0	62.7	-	2832	266.5
65.0-69.9	48	48.0	66.6	-	3308	431.2
70.0-74.9	15	15.0	71.0	-	4235	428.3
75.0-79.9	4	4.0	78.0	-	5164	764.8
80.0-84.9	3	3.0	81.7	-	6136	682.0
Total	100	Mean	66.5	5.7	3424	900.7

Table 38. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1972.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
9	1	0.8	50.0	-	1125	-
10	-	-	-	-	-	-
11	6	4.8	62.5	3.9	2081	567.8
12	30	24.2	67.6	5.3	2973	789.6
13	37	29.8	71.3	4.9	3283	710.0
14	19	15.3	72.8	5.9	3602	1096.6
15	12	9.7	77.3	5.2	3918	961.7
16	10	8.1	84.3	3.7	5050	815.8
17	3	2.4	80.7	7.8	4687	1305.1
18	5	4.0	79.7	7.3	5062	1028.6
19	-	-	-	-	-	-
20	1	0.8	81.0	-	4275	-
Total	124	Mean	72.3	7.7	3499	1120.5
Mean Age	13.6					

Table 39. Length composition of Arctic char taken by the commercial fishery at Ellice River, 1972.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
50.0-54.9	1	0.7	50.0	-	1125	-
55.0-59.9	3	2.1	57.2	-	1425	64.7
60.0-64.9	14	9.7	62.0	-	2185	284.7
65.0-69.9	38	26.4	67.7	-	2872	416.9
70.0-74.9	30	20.8	72.1	-	3333	491.3
75.0-79.9	27	18.8	76.3	-	3914	596.6
80.0-84.9	21	14.6	81.8	-	4719	555.1
85.0-89.9	10	6.9	87.3	-	5793	635.1
Total	144	Mean	72.7	7.6	3527	1123.5

Table 40. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1974.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
6	1	2.1	44.5	-	875	-
7	1	2.1	50.5	-	1450	-
8	5	10.6	56.3	1.0	2010	74.2
9	6	12.8	54.2	2.0	1654	242.1
10	2	4.3	60.0	7.1	2500	777.8
11	11	23.4	62.5	5.9	2625	730.8
12	8	17.0	67.9	7.6	3409	997.7
13	9	19.1	69.7	6.1	3644	800.5
14	3	6.4	74.0	3.6	4467	404.1
15	-	-	-	-	-	-
16	1	2.1	78.0	-	4450	-
Total	47	Mean	63.4	8.8	2853	1103.7
Mean Age	11.0					

Table 41. Length composition of Arctic char taken by the commercial fishery at Ellice River, 1974.

Length Interval (cm)	No.	%	Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
40.0-44.9	3	2.8	43.2	-	842	38.2
45.0-49.9	2	1.8	49.5	-	1400	141.4
50.0-54.9	13	11.9	52.1	-	1502	128.9
55.0-59.9	23	21.1	56.5	-	1958	125.1
60.0-64.9	13	11.9	62.8	-	2792	244.4
65.0-69.9	26	23.9	67.0	-	3270	243.1
70.0-74.9	18	16.5	72.7	-	4050	396.4
75.0-79.9	8	7.3	77.0	-	4703	554.0
80.0-84.9	2	1.8	81.3	-	5150	353.6
85.0-89.9	1	0.9	89.5	-	6950	-
Total	109	Mean	63.7	9.2	2926	1181.4

Table 42. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1976.

Age Group (yr)	No.	%	Fork Length (cm) Mean	SD	Dressed Weight (g) Mean	SD
7	2	1 [illegible]	50.6	0.8	1300	70.7
8	9	6.6	52.1	3.3	1428	259.9
9	24	17.5	56.4	3.4	1767	331.6
10	23	16.8	59.0	3.0	2102	367.9
11	21	15.3	63.7	4.0	2640	614.1
12	18	13.1	65.5	3.4	2889	535.9
13	17	12.4	66.3	4.2	2974	763.4
14	11	8.0	68.5	2.8	2995	570.7
15	8	5.8	72.7	4.0	3450	592.8
16	3	2.2	74.9	6.7	4000	1561.2
17	1	0.7	76.0	-	3600	-
Total	137	Mean	62.5	6.9	2484	826.8
Mean Age	11.2					

Table 43. Length composition of Arctic char taken by the commercial fishery at the Ellice River, 1976.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
45.0-49.9	4	2.6	48.2	-	1113	131.5
50.0-54.9	19	12.3	52.8	-	1471	153.0
55.0-59.9	33	21.4	57.6	-	1906	228.4
60.0-64.9	39	25.3	62.4	-	2428	248.1
65.0-69.9	38	24.7	67.1	-	2938	357.1
70.0-74.9	13	8.4	71.8	-	3700	505.4
75.0-79.9	7	4.5	76.2	-	4164	521.8
80.0-84.9	1	0.6	82.6	-	5750	-
Total	154	Mean	62.6	6.9	2498	846.1

Table 44. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
7	4	3.4	42.1	3.0	838	193.1
8	5	4.3	44.3	3.6	960	258.4
9	27	23.3	52.6	2.8	1607	299.3
10	20	17.2	54.5	4.8	1808	468.8
11	19	16.4	60.1	3.6	2458	541.9
12	14	12.1	60.9	5.1	2454	551.4
13	9	7.8	61.4	4.1	2372	513.0
14	4	3.4	63.5	7.4	2788	829.0
15	9	7.8	68.1	4.1	3406	608.5
16	3	2.6	68.5	11.3	3600	1602.3
17	1	0.9	66.1	-	3000	-
18	1	0.9	74.6	-	4500	-
Total	116	Mean	57.4	7.8	2157	857.4
Mean Age	11.0					

Table 45. Length composition of Arctic char taken by the commercial fishery at Ellice River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
30.0-34.9	1	0.4	32.5	-	350	-
35.0-39.9	4	1.7	39.1	-	638	47.9
40.0-44.9	11	4.6	43.8	-	923	90.5
45.0-49.9	18	7.6	47.7	-	1183	140.4
50.0-54.9	50	21.0	53.0	-	1628	167.6
55.0-59.9	61	25.6	57.5	-	2124	231.6
60.0-64.9	49	20.6	62.5	-	2693	291.4
65.0-69.9	24	10.1	67.5	-	3154	340.4
70.0-74.9	16	6.7	71.9	-	4119	420.7
75.0-79.9	3	1.3	77.2	-	4983	401.0
80.0-84.9	1	0.4	81.5	-	5450	-
Total	238	Mean	58.1	8.2	2266	933.7

Table 46. Age composition of Arctic char taken by the commercial fishery at Ellice River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
7	2	1.3	44.8	3.0	875	247.5
8	5	3.2	48.1	5.0	1130	410.2
9	23	14.9	52.2	5.8	1507	663.4
10	45	29.2	57.9	6.0	2052	710.0
11	32	20.8	60.6	4.2	2445	511.6
12	24	15.6	63.5	4.8	2713	622.7
13	5	3.2	67.2	4.9	3210	966.6
14	10	6.5	67.7	5.6	2855	816.3
15	4	2.6	65.8	8.2	3050	1185.3
16	2	1.3	76.5	7.7	4375	1520.3
17	-	-	-	-	-	-
18	-	-	-	-	-	-
19	1	0.6	72.3	-	4100	-
20	-	-	-	-	-	-
21	1	0.6	81.5	-	4100	-
Total	154	Mean	59.7	7.8	2282	902.0
Mean Age	11.0					

Table 47. Length composition of Arctic char taken by the commercial fishery at Ellice River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
40.0-44.9	4	1.9	43.0	-	800	158.1
45.0-49.9	27	12.7	48.0	-	1100	121.7
50.0-54.9	28	13.2	52.6	-	1474	250.0
55.0-59.9	39	18.4	57.7	-	1977	358.7
60.0-64.9	55	25.9	62.7	-	2574	280.0
65.0-69.9	27	12.7	66.8	-	3093	280.7
70.0-74.9	18	8.5	72.1	-	3814	582.3
75.0-79.9	10	4.7	77.3	-	4356	772.4
80.0-84.9	4	1.9	81.7	-	4638	579.3
Total	212	Mean	60.6	8.8	2392	1023.8

Table 48. Annual mortality rates for Arctic char taken in the commercial fishery at Ellice River.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1971	14-18	0.4167	0.0533	0.0028	0.5833
1972	14-20	0.5963	0.0472	0.0022	0.4037
1974	12-16	0.5000	0.0891	0.0079	0.5000
1976	10-17	0.6824	0.0260	0.0007	0.3176
1977	10-18	0.6802	0.0295	0.0009	0.3198
1978	11-21	0.5714	0.0376	0.0014	0.4286

Table 49. Age composition of Arctic char taken by the commercial fishery at Perry River, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
9	2	4.8	52.6	5.0	1500	424.3
10	4	9.5	60.5	3.1	2063	460.8
11	4	9.5	57.6	5.6	1750	628.5
12	6	14.3	61.5	4.9	2217	610.5
13	13	31.0	62.4	2.5	2188	255.1
14	7	16.7	65.2	3.3	2407	319.4
15	4	9.5	65.3	1.8	2450	313.6
16	-	-	-	-	-	-
17	2	4.8	65.3	5.9	2475	388.9
Total	42	Mean	62.1	4.6	2181	448.8
Mean Age	12.7					

Table 50. Length composition of Arctic char taken by the commercial fishery at Perry River, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
45.0-49.9	1	1.8	49.0	-	1200	-
50.0-54.9	2	3.6	53.0	-	1275	35.4
55.0-59.9	11	20.0	57.8	-	1791	198.5
60.0-64.9	24	43.6	62.8	-	2250	295.6
65.0-69.9	14	25.5	66.5	-	2532	243.9
70.0-74.9	2	3.6	71.1	-	3100	212.1
75.0-79.9	1	1.8	76.2	-	3800	-
Total	55	Mean	62.7	4.9	2235	499.9

Table 51. Age composition of Arctic char taken by the commercial fishery at Perry River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
10	6	8.1	56.2	7.9	1992	442.1
11	7	9.5	59.6	5.7	2200	518.8
12	18	24.3	61.6	5.8	2494	808.9
13	10	13.5	61.5	3.9	2085	460.7
14	10	13.5	65.8	5.7	2845	644.0
15	8	10.8	66.5	3.3	2931	435.0
16	6	8.1	62.9	4.9	2425	504.7
17	2	2.7	72.8	9.0	3875	954.6
18	5	6.8	71.5	3.9	3410	826.4
19	1	1.4	71.1	-	3750	-
20	1	1.4	74.4	-	4350	-
Total	74	Mean	63.4	6.6	2601	779.6
Mean Age	13.5					

Table 52. Length composition of Arctic char taken by the commercial fishery at Perry River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
40.0-44.9	2	1.8	42.4	-	1125	601.0
45.0-49.9	1	0.9	48.1	-	1050	-
50.0-54.9	3	2.7	53.0	-	1517	230.9
55.0-59.9	26	23.2	58.0	-	1877	295.7
60.0-64.9	32	28.6	62.3	-	2433	279.6
65.0-69.9	30	26.8	67.3	-	2968	365.4
70.0-74.9	11	9.8	72.7	-	3968	565.4
75.0-79.9	7	6.3	77.2	-	4314	625.6
Total	112	Mean	63.8	6.8	2655	870.7

Table 53. Annual mortality rates for Arctic char taken in the commercial fishery at Perry River.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1977	14-17	0.4615	0.1383	0.0191	.5385
1978	13-20	0.6818	0.0401	0.0016	.3182

Table 54. Age composition of Arctic char taken by the commercial fishery at Jayco River, 1976.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
10	1	0.9	48.3	-	1000	-
11	3	2.8	53.7	3.7	1350	360.6
12	4	3.7	53.3	3.5	1388	131.5
13	8	7.3	62.1	3.0	2369	473.5
14	9	8.3	63.6	4.6	2689	721.0
15	15	13.8	66.9	4.9	3177	800.2
16	17	15.6	67.3	5.1	3115	958.6
17	24	22.0	70.5	4.7	3573	810.8
18	7	6.4	69.8	3.2	3443	733.4
19	5	4.6	71.3	4.3	3490	523.7
20	4	3.7	73.6	6.8	3800	1051.2
21	7	6.4	72.9	4.5	3750	703.0
22	1	0.9	71.9	-	3550	-
23	1	0.9	84.2	-	6300	-
24	1	0.9	75.1	-	3800	-
25	1	0.9	69.0	-	3150	-
26	1	0.9	72.8	-	4150	-
Total	109	Mean	67.5	6.9	3156	1010.2
Mean Age	16.5					

Table 55. Length composition of Arctic char taken by the commercial fishery at Jayco River, 1976.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
45.0-49.9	2	1.4	48.9	-	1100	141.4
50.0-54.9	5	3.6	52.6	-	1250	176.8
55.0-59.9	14	10.0	58.0	-	1768	197.7
60.0-64.9	22	15.7	62.8	-	2398	305.3
65.0-69.9	39	27.9	67.8	-	3192	452.3
70.0-74.9	45	32.1	72.1	-	3759	439.4
75.0-79.9	12	8.6	76.8	-	4358	470.9
80.0-84.9	1	0.7	84.2	-	6300	-
Total	140	Mean	67.5	6.6	3130	971.2

Table 56. Age composition of Arctic char taken by the commercial fishery at Jayco River, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
12	2	1.5	58.7	5.3	1700	495.0
13	4	3.1	63.6	4.4	2388	630.3
14	8	6.2	70.3	4.6	3056	633.8
15	13	10.0	64.7	7.4	2473	817.2
16	28	21.5	68.8	3.6	2970	442.9
17	22	16.9	70.9	3.7	3143	556.6
18	19	14.6	71.6	2.4	3308	349.3
19	14	10.8	69.8	6.4	2957	672.5
20	8	6.2	69.7	7.3	2975	861.1
21	2	1.5	75.8	5.0	3700	424.3
22	4	3.1	72.8	4.3	3350	358.2
23	2	1.5	74.8	3.0	3550	636.4
24	1	0.8	69.6	-	2950	-
25	1	0.8	77.8	-	3600	-
26	1	0.8	71.4	-	3150	-
32	1	0.8	79.4	-	4700	-
Total	130	Mean	69.7	5.5	3029	663.3
Mean Age	17.4					

Table 57. Length composition of Arctic char taken by the commercial fishery at Jayco River, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
50.0-54.9	4	1.9	53.9		1325	184.8
55.0-59.9	11	5.2	58.1		1591	199.8
60.0-64.9	17	8.1	63.0		2229	241.1
65.0-69.9	62	29.4	67.9		2854	271.0
70.0-74.9	87	41.2	72.3		3310	302.8
75.0-79.9	29	13.7	77.2		3716	378.0
80.0-84.9	1	0.5	81.3		4550	-
Total	211	Mean	69.9	5.4	3023	646.6

Table 58. Annual mortality rates for Arctic char taken by the commercial fishery at Jayco River.

Year	Age-classes used	Survival (S)	SD of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1976	18-26	0.7033	0.470	0.0022	0.2967
1978	17-32	0.6621	0.0317	0.0010	0.3379

Table 59. Age composition of Arctic char taken by the commercial fishery at Elu Inlet, 1978.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
10	1	2.7	67.7	-	2650	-
11	10	27.0	64.8	3.3	2345	416.0
12	4	10.8	66.9	4.3	3163	1060.2
13	9	24.3	69.0	3.5	2722	617.5
14	9	24.3	67.7	11.0	2778	1470.8
15	4	10.8	69.7	3.8	2588	356.8
Total	37	Mean	67.3	6.2	2665	879.5
Mean Age	12.7					

Table 60. Length composition of Arctic char taken by the commercial fishery at Elu Inlet, 1978.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
50.0-54.9	1	1.8	51.6	-	1250	-
55.0-59.9	3	5.5	58.6	-	1517	57.7
60.0-64.9	10	18.2	63.1	-	2155	267.1
65.0-69.9	20	36.4	67.4	-	2760	528.1
70.0-74.9	16	29.1	72.2	-	3075	371.0
75.0-79.9	4	7.3	76.7	-	3738	482.0
80.0-84.9	-	-	-	-	-	-
85.0-89.9	1	1.8	86.7	-	5900	-
Total	55	Mean	68.3	5.8	2775	799.8

Table 61. Annual mortality rates for Arctic char taken in the commercial fishery at Elu Inlet.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1978	12-15	0.6094	0.0598	.0036	0.3906

Table 62. Age composition of Arctic char taken by the commercial fishery at Starvation Cove, 1977.

Age Group (yr)	No.	%	Fork Length (cm) Mean	Fork Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
10	2	5.9	63.5	4.0	2700	636.4
11	1	2.9	60.4	-	2200	-
12	9	26.5	61.3	4.2	2378	501.3
13	1	2.9	68.6	-	2850	-
14	5	14.7	66.6	3.4	3070	429.5
15	7	20.6	65.8	2.7	2793	518.4
16	4	11.8	66.0	4.9	2963	413.1
17	-	-	-	-	-	-
18	3	8.8	75.1	5.4	4183	812.9
19	1	2.9	74.2	-	4000	-
20	-	-	-	-	-	-
21	1	2.9	70.1	-	2850	-
Total	34	Mean	65.7	5.4	2882	696.5
Mean Age	14.3					

Table 63. Length composition of Arctic char taken by the commercial fishery at Starvation Cove, 1977.

Length Interval (cm)	No.	%	Length (cm) Mean	Length (cm) SD	Dressed Weight (g) Mean	Dressed Weight (g) SD
50.0-54.9	2	1.5	52.4	-	1425	35.4
55.0-59.9	18	13.9	57.9	-	2106	214.8
60.0-64.9	36	27.7	62.7	-	2511	266.5
65.0-69.9	48	36.9	67.1	-	2998	305.4
70.0-74.9	21	16.2	71.9	-	3502	327.7
75.0-79.9	5	3.9	77.8	-	4410	373.2
Total	130	Mean	65.6	5.4	2851	626.8

Table 64. Annual mortality rates for Arctic char taken in the commercial fishery at Starvation Cove.

Year	Age-classes used	Survival (S)	SE of S	Var. of S	Annual Mortality Rate (A), where A=1-S
1977	13-21	0.7797	0.0572	0.0033	0.2203

Printed in Canada by
Supply and Services Canada
Printing Office
for exclusive distribution by
Fisheries and Oceans
Freshwater Institute
Winnipeg, Manitoba
Canada